Department of Energy
Carlsbad Field Office
P. O. Box 3090
Carlsbad, New Mexico 88221

13 MAY 2003

ENTERED

MAY 2003

Mr. Steve Zappe, WIPP Project Leader
Hazardous Waste Permits Program
Hazardous and Radioactive Materials Bureau
New Mexico Environment Department
2905 E. Rodeo Park Drive, Bldg. 1
Santa Fe, NM 87505

Subject: Transmittal of Approved Waste Stream Profile Form AECHDM by the Central Characterization Project at Argonne National Laboratory - East

Dear Mr. Zappe:

The Department of Energy, Carlsbad Field Office (CBFO) has approved the Waste Stream Profile Form AECHDM by the Central Characterization Project at Argonne National Laboratory - East. Enclosed is a copy of the approved form as required by Section B-4(b)(1) of the WIPP Hazardous Waste Facility Permit No. NM4890139088-TSDF.

If you have any questions on this matter, please contact me at (505) 234-7357 or (505) 706-0066.

Sincerely,

Inez Triay for

Kerry W. Watson
CBFO Assistant Manager
Office of National TRU Program

Enclosure

cc: w/o enclosure
J. Kieling, NMED
C. Walker, TechLaw
J. Bennett, WTS
P. Roush, WTS
L. Greene, WRES
S. Calvert, CTAC
CBFO M&RC

CBFO:NTP:KWW:VW:03-2109:UFC:5822

030516

Attachment 2B - Waste Stream Profile Form

(1) Waste Stream Profile Number:	AECHDM		
(2) Generator site name:	ANL-E	(3)Technical contact:	Steve Rose
(3) Generator site EPA ID:	IL3890008946	(3) Technical contact phone number: 505-234-7591	
(4) Date of audit report approval by NMED:			
(4) Title, version number, and date of documents used for WAP Certification: See Continuation Sheet			
Did your facility generate this waste? ☐ Yes ☒ No		(5) If no, provide the name and EPA ID of the original generator: ANL-E; IL3890008946	
Waste Stream Information[1]			
(6) WIPP ID: None Available		(7) Summary Category Group: S5000	
(8) Waste Matrix Code Group: Heterogeneous Debris		(9) Waste Stream Name: ANL-E Contact-Handled Mixed Debris	
(10) Description from the TWBIR: The following description is from CCP-AK-ANLE-001, Rev. 8, instead of the TWBIR: AECHDM is a debris waste stream generated from facility maintenance operations and laboratory operations, which may have included routine or one-time operations to repair or replace equipment or to clean out facilities for modification or decommissioning. This debris waste stream contains metals, some of which are hazardous metals, other inorganic materials, plastics, cellulosics, rubber, and minor amounts of solidified and/or absorbed organinc and inorganic matrices.			
(11) Defense TRU Waste: ☒ Yes ☐No		(11) Check One: ☒CH ☐ RH	
(11) Number of SWBs 0	(11) Number of Drums 378	(11) Number of Canisters 0	
(12) Batch Data report numbers supporting this waste stream characterization: See Attachment 3, Table 1 of CIS			
(13) List applicable EPA Hazardous Waste Codes:[2] D004, D005, D006, D007, D008, D009, D011, D021, D027, D028, D030, D037, F001, F002, F003, F004 F005			
(14) Applicable TRUCON Content Codes: AE216 A through J			
Acceptable Knowledge Information[1]			
[For the following, enter supporting the documentation used (i.e., references and dates)]			
Required Program Information			
(15) Map of site: CCP-AK-ANLE-001, rev. 8, April 1, 2003, Section 4.1 and figures 1 and 2			
(15) Facility mission description: CCP-AK-ANLE-001, rev. 8, April 1, 2003, Section 4.1.4			
(15) Description of operations that generate waste: CCP-AK-ANLE-001, rev. 8, April 1, 2003, Section 4.1.2 and 4.3			
(15) Waste identification/categorization schemes: CCP-AK-ANLE-001, rev. 8, April 1, 2003, Section 4.4			
(15) Types and quantities of waste generated: CCP-AK-ANLE-001, rev. 8, April 1, 2003, Section 4.2.1			
(15) Correlation of waste streams generated from the same building and process, as appropriate: CCP-AK-ANLE-001, rev. 8, April 1, 2003, section 4.2.2 and Table 2			
(15) Waste certification procedures: **See Continuation Sheet**			
Required Waste Stream Information			
(16) Area(s) and building(s) from which the waste stream was generated: CCP-AK-ANLE-001, rev. 8, April 1, 2003, Section 5.1.1			
(16) Waste stream volume and time period of generation: CCP-AK-ANLE-001, rev. 8, April 1, 2003, Section 5.1.2			
(16) Waste generating process description for each building: CCP-AK-ANLE-001, rev. 8, April 1, 2003, Section 5.1.3			
(16) Process flow diagrams: None Compiled			
(16) Material inputs or other information identifying chemical/radionuclide content and physical waste form: CCP-AK-ANLE-001, rev. 8, April 1, 2003, Section 5.1.4 and 5.1.6			
Which Defense Activity generated the waste: (check one)			
☐ Weapons activities including defense inertial confinement fusion		☐ Naval Rectors development	
☐ Verification and control technology		☒ Defense research and development	

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Attachment 2B – Waste Stream Profile Form (continued)

☐ Defense nuclear waste and material by products management		☐ Defense nuclear material production	
☐ Defense nuclear waste and materials security and safeguards and security investigations			
Supplemental Documentation			
(17) Process design documents: (See Attachment 1 for ANL AK Source Document titles) AE-I-027			
(17) Standard operating procedures: AE-I-1, AE-I-4 THROUGH 6, AE-I-9, AE-I-18, AE-I-19, AE-I-28, AE-I-30, AE-I-35, AE-I-36, AE-I-37, AE-I-40 THROUGH 46, AE-I-51, AE-I-57 THROUGH 73, AE-I-75, AE-I-78, AE-I-80, AE-I-82 THROUGH 92, AE-I-95, AE-I-97, AE-I-99 THROUGH 107, AE-I-109 THROUGH 112, AE-I-114 THROUGH 138, AE-I-140, AE-I-142 THROUGH 147, AE-I-149 THROUGH 152, AE-I-158, AE-I-160, AE-I-176, AE-I-191 THROUGH 194, AE-P-18, AE-P-95, AE-P-97, AE-P-99, AE-P-102, AE-P-105, AE-P-106			
(17) Safety Analysis Reports: AE-I-50, AE-P-044, AE-P-45, AE-P-106			
(17) Waste packaging logs: AE-C-021, AE-I-77, AE-P-69			
(17) Test plans/research project reports: AE-D-10, AE-I-8, AE-I-50, AE-I-60, AE-I-165, AE-I-167, AE-I-171 THROUGH AE-I-174, AE-I-176, AE-I-181 THROUGH 187, AE-P-59 THROUGH 65, AE-P-107			
(17) Site databases: AE-P-69			
(17) Information from site personnel: AE-C-3, AE-C-4, AE-C-6, AE-C-9, AE-C-10, AE-C-11, AE-C-13, AE-C-17 THROUGH 22, AE-C-24, AE-C-27, AE-C-28, AE-I-002, AE-I-O12, AE-I-029			
(17) Standard industry documents: None compiled			
(17) Previous analytical data: None compiled			
(17) Standard industry documents: None compiled			
(17) Material safety data sheets: AE-P-68			
(17) Sampling and analysis data from comparable/surrogate Waste: None compiled			
(17) Laboratory notebooks: AE-I-15			
(17) Sampling and Analysis Information[2]			
For the following, when applicable, enter procedure title(s), number(s) and date(s)			
	(18) Radiography: See Continuation Sheet		
	(18) Visual Examination: See Continuation Sheet		
	Headspace Gas Analysis		
	(19) VOCs: See Continuation Sheet		
	(19) Flammable: See Continuation Sheet		
	(19) Other gases (specify): N/A		
	Homogeneous Solids/Soils/Gravel Sample Analysis		
	(20) Total metals: N/A		
	(20) PCBs: N/A		
	(20) VOCs: N/A		
	(20) Nonhalogenated VOCs: N/A		
	(20) Semi-VOCs: N/A		
	(20) Other (specify): N/A		
Waste Stream Profile Form Certification:			
I hereby certify that I have reviewed the information in this Waste Stream Profile Form, and it is complete and accurate to the best of my knowledge. I understand that this information will be made available to regulatory agencies and that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations.			
(21) [signature]		Steve Rose	5-9-03
Signature of Site Project Manager		Printed Name	Date
NOTE: (1) Use back of sheet or continuation sheets, if required. (2) If radiography, visual examination, headspace gas analysis, and/or homogeneous solids/soils/gravel sample analysis were used to determine EPA Hazardous Waste Codes, attach signed Characterization Information Summary documenting this determination.			

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Continuation Sheet:

WAP Certification Documents:

CCP-PO-001, rev. 5, CCP Transuranic Waste Characterization Quality Assurance Project Plan, February 5, 2003
CCP-PO-002, rev. 5, CCP Transuranic Waste Certification Plan, February 12, 2003
CCP-PO-007, rev. 6, CCP/ANL-E Interface Document, January 26, 2003
CCP-AK-ANLE-001, rev. 8, CCP Acceptable Knowledge Summary Report for Argonne National Laboratory-East Contact-Handled TRU Waste Facility Maintenance and Laboratory Operations, April 1, 2003

Waste Certification Procedures:

CCP-TP-001, rev. 8, CCP Project Level Data Validation and Verification, February 3, 2003
CCP-TP-002, rev. 12, CCP Reconciliation of DQOs and Reporting Characterization Data, April 30, 2003
CCP-TP-003, rev. 12, CCP Sampling Design and Data Analysis for RCRA Characterization, January 25, 2003
CCP-TP-005, rev. 12, CCP Acceptable Knowledge Documentation, March 26, 2003
CCP-TP-030, rev. 8, CCP WWIS Data Entry and TRU Waste Certification, March 26, 2003

Visual Examination:
CCP-TP-013, rev. 12, CCP Waste Visual Examination and Repackaging, January 26, 2003.

Headspace Gas Analysis:
CCP-TP-031, rev. 12, CCP Headspace Gas Sampling Using Automated Manifold, February 4, 2003.
CCP-TP-034, rev. 9, CCP HSG Data Generation and Batch Data Reporting, February 4, 2003.

Radiography:
CCP-TP-045, rev. 6, CCP RTR #5 Radiography Inspection Operating Procedure, January 31, 2003

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SUMMATION OF ASPECTS OF AK SUMMARY REPORT: AECHDM

Overview:

The ANL-E facility is a multi-disciplinary research laboratory that performs work in basic and applied science in the areas of engineering, energy technology, chemistry, physics, materials, biomedicine, and environmental studies. All waste has been determined to have originated from, or was commingled with, waste from ANL-E defense-related programs. (See CCP-AK-ANLE-001, Table 2 for specifics). Defense Waste generated from these activities is consistent with guidance from the Carlsbad Field Office for waste disposal at the WIPP.

ANL-E Contact-Handled Mixed Debris Mixed waste was generated from facility maintenance operations which were generated during 1985 through 2001. This summation of the AK Summary Report includes information to support Waste Stream Profile Form (WSPF) Number AECHDM for Heterogeneous Debris Waste. Additional details are discussed in CCP-AK-ANLE-001, *Central Characterization Project Acceptable Knowledge Summary Report for Argonne National Laboratory – West Contact-Handled TRU Waste Facility Maintenance and Laboratory Operations.*

Waste Stream Identification Summary:

Site Where TRU Waste Was Generated:	Argonne National Laboratory - East
Waste Stream Name:	ANL-E Contact-Handled Mixed Debris
Waste Stream Number:	AECHDM
Dates of Waste Generation:	1985 - 2001
Facility Where TRU Waste Was Generated:	ANL-E facility including buildings: 200, 205, 212, 306, 315/316, 350, 40, 202, 203, 206, 211, 222, 223, 330, 333, 362, 369, 378, 391, and 815
Waste Stream Volume:	378 drums
Summary Category Group:	S5000 – Debris Waste
Waste Stream TWBIR Identification:	None Available
Waste Stream MWIR Identification:	None Available
Waste Matrix Code Group:	Heterogeneous Debris Waste
RCRA Hazardous Waste Codes:	D004, D005, D006, D007, D008, D009, D011, D021, D027, D028, D030, D037, F001, F002, F003, F004, and F005
Waste Matrix Code:	S5400 – Heterogeneous Debris

This waste stream is assigned the waste matrix code (WMC) S5400 "Heterogeneous Debris" because the waste is not pre-dominantly organic or inorganic waste as defined by the DOE Waste Treatability Group Guidance document.

TRUPACT-II Content Code (TRUCON):	AE216 A, B, C, D, E, F, G, H, I, or J

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Waste Stream Description:

AECHDM is a debris waste stream generated from facility maintenance operations and laboratory operations, which may have included routine or one-time operations to repair or replace equipment or to clean out facilities for modification or decommissioning. Waste treatment operations in Building 306 generated a variety of empty liquid waste containers, which have also been included in this waste stream. (Liquids removed from these containers were treated and are included in the homogeneous solid waste stream which is a separate waste stream.) This debris waste stream consists of an assortment of broken and discarded equipment and glovebox supplies, contaminated personal protective equipment, and small quantities of solidified or absorbed liquids.

This debris waste stream contains metals, some of which are hazardous metals, other inorganic materials, plastics, cellulosics, rubber, and minor amounts of solidified and/or absorbed organinc and inorganic matrices.

The waste was generated between 1985 and 2001

Point of Generation

Location

The ANL-E facility is located in Argonne, Illinois.

Area and Building of Generation

The primary facilities and divisions that generated this waste stream are: Building 200 (Chemistry Division and Chemical Technology Division [CMT]), Building 205 (CMT), Building 212 (Energy Technology and its predecessor divisions), Building 306 (Waste Management Operations), Buildings 315/316 (Reactor Research and Development),and Building 350 (New Brunswick Laboratory). Minor quantities of waste have also been generated at Buildings 40, 202, 203, 206, 211, 222, 223, 330, 333, 362, 369, 378, 391, and 815. Wastes from the buildings have been commingled resulting in a single heterogeneous debris waste stream generated from facility maintenance operations.

Generating Processes

Description of Waste Generating Process

The ANL-E facility is a multi-disciplinary research laboratory that performs work in basic and applied science in the areas of engineering, energy technology, chemistry, physics, materials, biomedicine, and environmental studies

AECHDM is a debris waste stream generated from facility maintenance operations and laboratory operations, which may have included routine or one-time operations to repair or replace equipment or to clean out facilities for modification or decommissioning. This debris waste stream consists of an assortment of broken and discarded equipment and glovebox supplies, contaminated personal protective equipment, and small quantities of solidified or absorbed liquids.

RCRA Determinations

Hazardous Waste Determinations

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This waste stream does not contain liquid waste or other constituents that would demonstrate the RCRA characteristic of ignitability. This is based on information contained in the Waste Management System (WMS), on waste requisitions, and WMO staff input. In addition, free liquids in containers greater than 1 inch on the bottom of the container or greater than 1% volume of the container would be detected in the drum and would be rejected by RTR. Only WIPP WAP compliant drums will be shipped to WIPP (i.e. less than or equal to 1 inch of liquid in internal containers and less than 1% of the waste containers volume). The ignitability characteristic (D001) does not apply to the waste.

Corrosivity

Under 40 CFR 261.22, a solid waste exhibits the characteristic of corrosivity if a representative sample of the waste has either of the following properties:

- It is aqueous with a pH less than or equal to 2, or greater than or equal to 12.5, as determined by a pH meter using Method 9040 in "Test Methods for Evaluation Solid Waste, Physical and Chemical Methods," EPA Publication SW-846.
- It is a liquid and corrodes steel (SAE 1020) at a rate greater than 6.35 mm (0.250 inch) per year at a test temperature of 55 degrees Celsius (130 degrees Fahrenheit) as determined by its test method specified in National Association of Corrosion Engineer (NACE) Standard TM-01-69 as standardized in SW-846.

There is no information contained in the Argonne Laboratory WMS or waste stream requisition documentation indicating corrosive material is present in this waste stream. The waste in this stream is not an aqueous liquid. As determined by radiography and visual examination, none of the drums to be shipped contained greater than 1 volume percent liquid (present as residual liquid). The corrosive characteristic (D002) does not apply to the waste.

Reactivity

The waste stream does not meet the characteristic of reactivity as defined under RCRA 40 CFR 261.23. The waste materials are stable and will not react violently with water, form potentially explosive mixtures with water or generate toxic gases, vapors or fumes when mixed with water or generate toxic gases, vapors or fumes when mixed with water based on information contained in the WMS, on waste requisitions, and WMO staff input.

The materials do not contain sulfides and are not capable of detonation or explosive reaction. Further, this waste does not present a compatibility hazard due to the chemicals identified with each other with the packaging of the waste. Therefore, the waste code for reactivity (D003) is not assigned to this waste stream.

Toxicity

Information concerning the presence of hazardous constituents is reported by waste generators and is summarized in the WMS. This information was compiled into a worksheet and evaluated for the purpose of identifying those drums containing hazardous constituents. Any drum containing a hazardous constituent(s) was identified as being mixed waste, and the appropriate hazardous waste code was assigned to the waste stream. Hazardous waste codes were also assigned based on evaluations of operating procedures and safety reviews for laboratory operations.

F-Listed and Other Solvents

Hazardous constituent information is reported by waste generators on waste requisitions and is summarized in the WMS. Based on information contained in the WMS, and on waste requisitions, generators did not apply hazardous waste numbers for F-listed or other solvents.

However, some of the debris waste contained in this waste stream, which was assigned spent solvent hazardous waste numbers (F001, F002, F003, F004 and F005) based on the presence of spent solvents in liquid waste generated at Buildings 200, 205, and 350. Also, source documentation describes the use of the following chemicals associated with TRU waste-generating activities:

- Acetone used as a solvent, a reagent, and for cleaning glassware: F003
- Carbon tetrachloride used as an extraction solvent and other unspecified uses: F001
- Benzene: F005
- Ethyl acetate: F003
- Ethyl benzene: F003
- Ethyl ether: F003
- Freon: F002
- Methanol: F003
- Methyl ethyl ketone: F005
- Methyl isobutyl ketone: F003
- Methylene chloride: F002
- Nitrobenzene: F004
- Toluene: F005
- Trichloroethane: F002
- Xylene: F003
- Trichloroethylene used to clean joints and in treatment studies: F002

Based on the above information, the spent solvent hazardous waste numbers (F001, F002, F003, F004, F005) are assigned to this waste stream.

Toxicity Characteristic Organic Solvents

Hazardous constituent information is reported by waste generators on waste requisitions and is summarized in the WMS. Based on information contained in the WMS, and on waste requisitions, generators did not assign hazardous waste numbers for toxicity characteristic organic solvents. However, source documentation indicates that the following toxicity characteristic chemicals were used in processes associated with TRU waste generation:

- 1,2-Dichloroethane: D028
- Chlorobenzene: D021
- 1,4-Dichlorobenzene: D027
- 2,4-Dinitrotoluene: D030
- Pentachlorophenol: D037

In the absence of data to the contrary, the above hazardous waste numbers will be applied to this waste stream. In addition, the D-listed chemicals may be present in TRU waste, but will not be assigned toxicity characteristic hazardous waste numbers because F-listed numbers have been assigned for these chemicals based on their solvent uses: benzene, carbon tetrachloride, methyl ethyl ketone, nitrobenzene, and trichloroethylene.

Methoxychlor (D014) is listed as a reagent in a calibration solution for extract cleanup by Gel Permeation Chromatography (GPC). This calibration solution was prepared only once during the development of a Standard Operating Procedure (SOP). The SOP was developed but never used, because there was never a need for cleanup. Furthermore, the instrument was in a non-radiological area, and as a result, radioactive samples could not have been run through the GPC. Any calibration solution, therefore, would have been disposed of as hazardous waste and not as radioactive hazardous waste. Therefore, the hazardous waste code D014 does not apply to this waste stream.

Based on the above information, toxicity characteristic organic solvent codes D021, D027, D028, D030, and D037 have been assigned to the waste.

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U-and P-Listed Chemicals

Hazardous constituent information is reported by waste generators on waste requisitions and is summarized in the WMS. Based on information contained in the WMS, and on waste requisitions, waste generators did not assign hazardous waste numbers for U- or P-listed chemicals. However, source documents indicate that some U-listed chemicals were used in potential TRU waste generating processes, including the following: Hydrofluoric acid, Formic acid, Phenol, N-nitroso-n-dipropylamine, and 2-chlorophenol.

In the case of HF and formic acid, ANL-E procedures direct that acids be neutralized and absorbed. No hazardous waste numbers are assigned for these constituents because there is no evidence that unused chemicals were discarded or that any spills occurred.

Phenol, 2-chlorophenol and N-nitroso-di-N-propylamine are used as matrix standard spiking solutions in the procedure ACL-175. The reagents were purchased in small lots (100 mg) and mixed with other spike materials in methanol to be used in a method based on EPA SW-846 Method 3520A, Revision 1. U-listed hazardous waste numbers are not applied for these chemicals because there is no evidence that unused chemicals were discarded or that any spills occurred.

Based on the above information this waste stream has not been assigned any U- or P-listed codes.

Metals

Hazardous constituent information is reported by waste generators on waste requisitions and is summarized in the WMS. These requisitions indicated the presence of the following metals in some containers in this waste stream:

Arsenic (D004)
Barium (D005)
Cadmium (D006)
Chromium (D007)
Mercury (D009)
Silver (D011)

Also, during waste confirmation activities, several drums were identified as containing hazardous constituents (i.e., lead (D008) from lead lined gloves) that were not listed on waste requisitions or in the WMS for those drums. No other RCRA characteristic metals are indicated in the waste stream. Based on this information, this waste stream has the following hazardous waste number assignments: D004 (arsenic), D005 (barium), D006 (cadmium), D007 (chromium), D008 (lead), D009 (mercury), and D011 (silver).

Conclusion

In summary, EPA hazardous waste numbers D004, D005, D006, D007, D008, D009, D011, D021, D027, D028, D030, D037, F001, F002, F003, F004, and F005 have been assigned to all drums of the waste stream.

Polychlorinated Biphenyls

Based on information contained in the WMS, and on waste requisitions, this waste stream does not contain PCBs or PCB-containing articles. The absence of PCBs will be confirmed by using RTR and/or VE to inspect every waste container for the presence of PCB suspect items.

Physical Form

Physical Form

AECHDM is a debris waste stream that containers metals, other inorganic materials, and organic materials (e.g., plastic, paper). The physical form of this waste stream has been confirmed using RTR and /or VE.

Prohibited Items

Visual examination was used in lieu of radiography for the first drums through the characterization confirmation process (including all drums in Lot 1) to ensure the absence of prohibited items. For the remainder of the drums in the waste stream, all drums are undergoing RTR. VE will be performed on the required number of drums that have undergone RTR as quality control check on the RTR process. These processes are used to determine that the containers do not include prohibited items, such as free liquids, sealed containers greater than four liters, or non-punctured aerosol cans. This information is documented during the RTR and/or VE process.

Headspace Gas/Volatile Organic Compound Information

Lot #1 of waste stream AECHDM consists of a total of 28 drums. Of the 28 drums, there were 2 detects for Acetone and Methylene Chloride and 3 detects for Methanol. None of these detects were above the PRQL. No hazardous waste codes were added to the waste stream based on headspace gas. The headspace gas sampling and analysis confirms the acceptable knowledge for this waste stream.

The specifics of this information are included in the attached Headspace Gas Summary report.

Radionuclide Information

Radiological Characterization

Waste from this stream is contaminated primarily with U-238 and Pu-239 waste consisting of the following radioisotopes and corresponding ranges of weight percent (wt %) distribution:

U-238:	0 to 96.5%
Pu-239:	0 to 2%
Pu-240:	0 to 0.5%
Pu-242:	0 to 0.01%
Trace amounts (<0.01%) for the remaining WIPP Tracked Isotopes	
Np-237:	0 to 0.7%
Tc-99:	0 to 0.3%
Th-232:	0 to 0.4%
U-235:	0 to 0.9%

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Attachment 1 Source Documents

SD Number	Title/Description
AE-C-003	Historic Operations in Building 212, D-Wing, Tom Krause, 6/9/00,
AE-C-004	Record of Communication; Analytical Chemistry Laboratory Operations and Locations, Tom Krause, 7/20/00,
AE-C-006	Discussion with Cindy Rock; Waste Management Operations, Tom Krause, 7/20/00,
AE-C-009	Completion of Waste Requisitions for Building 212. D-Wing D&D Waste Drums, Interview of Bob Nelson by Tom Krause, 7/12/00,
AE-C-010	Puncturing of Heat-Sealed Bags in Building 212, D-Wing D&D Waste Drums, Tom Krause interview of Cindy Rock, Manager, 7/21/00,
AE-C-011	Two D&D Projects in Building 212, D-wing, Interview by Tom Krause of Alan Hins, 7/24/00,
AE-C-013	Discussion with Don Graczyk; ACL Facility Descriptions for Bldg 200, Tom Krause, 8/18/00,
AE-C-017	Communication with Terri Bray; Nonmixed RH TRU drums, Tom Krause, 9/13/00,
AE-C-018	CH TRU waste generation from the AGHCF, Interview of Terri Bray by Tom Krause, 7/26/00,
AE-C-019	Chemical Usage at NBL for plutonium and uranium analysis - Conversation with Alma Stiffin and Iris Frank, Tom Krause, 9/13/00,
AE-C-020	Content of radionuclide solutions - Conversation with Alma Stiffen and Jan Muller, Tom Krause, 9/15/00,
AE-C-021	Asbestos in Drum #27214: Record of Communication, Interviewee is Bob Nelson., Tom Krause, 8/11/00,
AE-C-022	Correspondence with Terri Bray re: Chemical Usage in the AGHCF, T. Krause, 9/21/00,
AE-C-024	Miscellaneous Correspondence with Daniel Hecker, Gary Lasswell, 9/15/00,
AE-C-027	Operations Building 315, Tom Krause, 9/28/01,
AE-C-028	Operations that Generated TRU Waste in Building 223, Tom Krause, 9/28/01,
AE-D-010	Phosphate Mineralization of Actinides by Measured Additions Precipitating Anions, ANL-E, ANL-E, 02/06/02,
AE-I-001	Separation of Plutonium by Mini Anion-Exchange, Jon R. Weiss, NBL-PC-IE-2, New Brunswick Laboratory, 03/10/78,
AE-I-002	IFR Fuels Work, A. G. Hins, 8407-AGH-003, 8/13/84,
AE-I-004	Dissolution of Plutonium Containing Materials Using Sealed Reflux, New Brunswick Laboratory, NBL-SP-Pu-2, New Brunswick Laboratory,
AE-I-005	Determination Of Weight Loss of Plutonium Oxide on Heating, NBL-SA-PP-I, New Brunswick Labortory,
AE-I-006	Determination of Specific Gravity and Density of Plutonium Solutions, NBL-SA-PP-2, New Brunswick Laboratory,
AE-I-008	IFR Fuel Interdiffusion Studies (Dayananda) Test Capsule Evaluation, Allan Hins, 8711-AGH-03, 5/13/88,
AE-I-009	Determination of Plutonium by Controlled -Potential Coulmetry, NBL-SA-Pu(E)-1, New Brunswick Laboratory,
AE-I-012	SDI Cermet Fuel Fab - Glovebox Facility, A. G. Hins, 8512-AGH-03, 5/29/86,
AE-I-015	Sequence of Events for Camphor Coating Studies of UN Powder, Unknown, 5/22/87,
AE-I-018	Determination of Plutonium Using Automated Controlled-Potential Coulometry, NBL-SA-Pu(E)-1.1, New Brunswick Laboratory,
AE-I-019	Dissolution of Pu-Containing Materials Using Acid Digestion, NBL-SP-Pu-1, New Brunswick Laboratory,
AE-I-027	Liquid-Liquid, Packed Column Countercurrent Extractor for Pu Extraction from U-Pu-Fe, W. Miller, ANL-CMTI-8602, Argonne National Laboratory East/CMT, 9/19/83,
AE-I-028	Safety Review - Plutonium Experiment in G-118, T. Tomczuk, W. Miller, ANL-CMTI-8883, Argonne National Laboratory East/CMT, 2/20/85,
AE-I-029	Trip Report Visit to LANL and Rocky Flats Analytical Laboratory, Bowers, D. L., Heinrich, R. R., Huff, E. A., ANL-CMTI-8884, Argonne National Laboratory East/CMT, 2/26/85,
AE-I-030	Safety Review - Proposed Experiment - Alpha Radiolysis of TRUEX-CCl4 with 241Am, Kalina, D., ANL-CMTI-8936, ANL, May 23, 1985,
AE-I-035	Determination of Uranium by Automated Constant Current Coulometry, Paul V. Croatto, NBL-SA-U(E)-3.1, Revision 1, New Brunswick Laboratory, 11/24/99,
AE-I-036	Determination of Uranium by Ferrous Reduction in Phosphoric Acid and Titration with Cerium (IV)., Jeffrey P. Zebrowski, NBL-SA-U(E)-6, Revision 1, New Brunswick Laboratory, 11/24/99,
AE-I-037	Preparation of Plutonium Blind Standard Solution and Aliquants, M. I. Spaletto, NBL-CAL-Pu(E)-1, Revision 4, NBL, 12/3/99,
AE-I-040	Safety Review Alpha Particle Irradiation of Plastic Materials, Reed, D. T., Gerding, T. J., Seils, C. A., ANL-CMTI-9947, Argonne National Laboratory East/CMT, 11/2/89,
AE-I-041	Dissolution of Plutonium-Containing Materials Using Acid Digestion, Alma V. Stiffin, NBL-SP-Pu-1, Revision 2, New Brunswick Laboratory, 12/13/99,
AE-I-042	Safety Review of Remote Preparation of Radioactive Glass Samples in the Senior Cave, Hoh, J., Gerding. T., ANL-CMTI-9988, Argonne National Laboratory East/CMT, 1/16/90,
AE-I-043	Dissolution of Plutonium-Containing Materials Using Sodium Bisulfate Fusion, Alma V. Stiffin, NBL-SP-Pu-3,

SD Number	Title/Description
	Revision 2, New Brunswick Laboratory, 12/13/99,
AE-I-044	Safety Review for Processing NBL Waste Solutions in G-134 and G-117, Chamberlain, D.B., ANL-CMTI-10118, New Brunswick Laboratory, 9/14/89,
AE-I-045	Dissolution of Plutonium-Containing Materials Using Sodium Carbonate Fusion, Alma V. Stiffin, NBL-SP-Pu-3.1, Revision 2, New Brunswick Laboratory, 12/13/99,
AE-I-046	Safety Review for the Gas Generation Studies in Support of the WIPP, Reed. D., Okajima, S., ANL-CMTI-101151, Argonne National Laboratory East/CMT, 10/1/90,
AE-I-050	Revised Criticality Hazards Control Statement for IFR Fuels Reprocessing Laboratory G-118 Located in Bldg. 205, Wolson, R., ANL-CMTI-9256, Argonne National Laboratory East/CMT, 2/1/93,
AE-I-051	Safety Review for Sealing and Opening Vials Irradiated with 60Co Irradiation Facilities - Bldg. 205, Room X-109, Buchholz, B., Nunez, L., ANL-CMTI-10953, ANL-E/CMT, 8/24/93,
AE-I-057	Preparation of Weight Aliquants of Plutonium Solutions, M. Spaletto, NBL-SP-Pu-5, Revision 3, New Brunswick Laboratory, 12/13/99,
AE-I-058	Electrolytic Cleaning and Dissolution of Plutonium Metal, M. Spaletto, NBL-SP-Pu-6, Revision 3, New Brunswick Laboratory, 12/13/99,
AE-I-059	Cleaning by Filing and Dissolution of Plutonium Metal, A. Stiffin, NBL-SP-Pu-7, Revision 3, New Brunswick Laboratory, 12/13/99,
AE-I-060	Electrodeposition of Plutonium and other Alpha-Active Actinides, A. Stiffin, NBL-SP-Pu-8, Revision 1, New Brunswick Laboratory, 12/13/99,
AE-I-061	Dissolution of Uranium Metal Samples, A. Stiffin, NBL-SP-U-2, Revision 2, New Brunswick Laboratory, 12/13/99,
AE-I-062	Dissolution of Uranium Oxides in Powder or Pellet Form, I. Frank, NBL-SP-U-3, Revision 3, New Brunswick Laboratory, 12/13/99,
AE-I-063	Microwave Dissolution of UO2 and U308, Iris W. Frank, NBL-SP-U-3.1, 2, New Brunswick Laboratory, 12/13/99,
AE-I-064	Microwave Dissolution of Uranium-Contaminated Alumina Trap Material, Iris W. Frank, NBL-SP-U-3.2, Revision 1, New Brunswick Laboratory, 12/13/99,
AE-I-065	Dissolution of Uranium-Aluminum and Uranium-Aluminum-Silicon Alloys, Iris W. Frank, NBL-SP-U-4, Revision 2, New Brunswick Laboratory, 12/13/99,
AE-I-066	Dissolution of Uranium-Containing Scrap and Ash Samples Using Acid Leaching, Alma V. Stiffin, NBL-SP-U-5.1, Revision 1, New Brunswick Laboratory, 12/13/99,
AE-I-067	Dissolution of Uranium-Containing Materials Using Sodium Carbonate, Alma V. Stiffin, NBL-SP-U-5.2, Revision 1, New Brunswick Laboratory, 12/14/99,
AE-I-068	Dissolution of Pre-Product and Product Materials, Alma V. Stiffin, NBL-SP-U-7, New Brunswick Laboratory, 12/14/99,
AE-I-069	Purification of Uranium and Plutonium by Anion Exchange for Mass or Alpha Spectrometric Analysis, B. Srinivasan, NBL-SP-U, Pu(1)-1, Revision 4, New Brunswick Laboratory, 12/14/99,
AE-I-070	Safety Review for Unsaturated Testing of Uranium Metal Spent Fuel in Bldg. 205 Senior Cave and K-116 Facilities, Fortner, J., CMT50-0118-Draft, Revision 00, ANL-E/CMT, 3/7/00,
AE-I-071	Safety Review of Tests with Samples of Spent Fuel in Bldg. 205, K-104 (Senior Cave) and, in K-116, Sampling of Leachate Solutions from the Tests, Finn, P. A., CMT50-0058-EP, Revision 01, ANL-E/CMT, 3/13/00,
AE-I-072	Safety Review for Drip Tests on Radioactive Waste Glass Samples, Cunnane, J. C., CMT50-0080-EP, Revision 01, ANL-E/CMT, 4/3/00,
AE-I-073	PCT Testing of Pu-Containing Glass-Bonded Sodalite in Bldg. 205, Labs G-109 and G-133, Morss, L. R., CMT50-0070-EP, Revision 01, ANL-E/CMT, ANL-E/CMT,
AE-I-074	Determination of 241-Am in Solution by Gamma-Ray Spectrometry, Alma V. Stiffin, NBL-SA-Am(I)-1.1, Revision 2, New Brunswick Laboratory, 11/24/99,
AE-I-075	Determination of the Weight Loss of Plutonium Oxide on Heating, M. Irene Spaletto, NBL-SA-PP-1, Revision 3, New Brunswick Laboratory, 12/3/99,
AE-I-077	Completed Checklists for DPP 5.11, "Bagout and Packaging of Lead from Gloveboxes", DPP 5.11, Revision 1, various,
AE-I-078	Manual Determination of the Density and Specific Gravity of Uranium- and Plutonium-Containing Solutions, Khalida S. Scheidelman, NBL-SA-PP-2, Revision 2, New Brunswick Laboratory, 11/24/99,
AE-I-080	Completed Checklist for DPP 5.13, "Inert Particulate Solidification", DPP 5.13, Revision 0, 4/7/94,
AE-I-082	Completed Checklists for DPP 5.15, "Silicon Oil and Grease Solidification", DPP 5.15, Revision 0, various,
AE-I-083	Removal of Magnesium-Oxide from Bldg. 212 Gloveboxes, various,
AE-I-084	Determination of Uranium by the New Brunswick Laboratory High Precision Titrimetric Method-Gravimetric Version, Anna M. Voeks, NBL-SA-U(E)-2.2, Revision 8, New Brunswick Laboratory, 12/02/99,
AE-I-085	Building 212 D Wing Glovebox D&D Project, Documentation Listing, B. Pitman, P. Carlson, DL5.1, 0 and 2, ANL-E, EWM, 2/10/94,
AE-I-086	Vacum Pump D&D-Volume Reduction, B.M.Pitman, P.S.Carlson, DPP 5.8, 0 and 1, ANL-E EWM, 8/3/93:11/16/93,
AE-I-087	Diffusion Pump D&D, S. Carlson, DPP-5.9, Revision 0, ANL-E/EWM, 1/25/94,

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AE-I-088	Contaminated Cooling Water System D&D, B. M. Pitman, P. S. Carlson, DPP 5.10, Revision 1, ANL-E/EWM, 1/25/94; 10/25/93,
AE-I-089	Bagout and Packaging of Lead from Glove boxes, B. M. Pitman, P. S. Carlson, DPP 5.11, Revision 0 and 1, ANL-E, EWM, 1/10/94; 1/13/94,
AE-I-090	Acid/Caustic Neutralization and Solidification, B. M. Pitman, P. S. Carlson, DPP 5.12, Revision 0, ANL-E, EWM, 12/21/93,
AE-I-091	Inert Particulate Solidification, B. M. Pitman, P. S. Carlson, DPP 5.13, Revision 0, ANL-E, EWM, 1/12/94,
AE-I-092	Oil and Organic Liquid Solidification, B. Pitman, P. Carlson, DPP 5.14, 0, ANL-E EWM, 1/19/94,
AE-I-095	NFS Glovebox D&D Procedures, Nuclear Fuel Services, various, Revision 0 and 1, Nuclear Fuel Services, Inc, various,
AE-I-097	Determination of Uranium by Manual Constant Current Coulometry, Paul V. Croatto, NBL-SA-U(E)-3, Revision 1, New Brunswick Laboratory, 11/24/99,
AE-I-099	Determination of Micro- to Sub-microgram Quantities of Uranium Using Laser-Induced Kinetic Phosphorimetry, Paul V. Croatto, NBL-SA-U(E)-8, Revision 1, New Brunswick Laboratory, 11/24/99,
AE-I-100	Determination of Uranium Blank Concentrations by Isotope Dilution and Thermal Ionization Mass Spectrometry, Steven A. Goldburg, NBL-SA-U(E)-9, Revision 1, New Brunswick Laboratory, 12/2/99,
AE-I-101	Determination of Isotopic Composition of Uranium by Thermal Mass Spectrometry, Anthony J. Traina, NBL-SA-U(I)-4, Revision 5, New Brunswick Laboratory, 11/24/99,
AE-I-102	Determination of Isotopic Composition of Uranium Total Evaporation Mass Spectrometry (Finnigan Mat 261), Anthony J. Traina, NBL-SA-U(I)-4.1, Revision 1, New Brunswick Laboratory, 12/2/99,
AE-I-103	Determination of Uranium and Plutonium Using Dilution Mass Spectrometry, B. Srinivasan, NBL-SA-U, Pu(E)-1, Revision 2, New Brunswick Laboratory, 12/3/99,
AE-I-104	Determination of Isotopic Composition of Plutonium or Uranium by Thermal Ionization Mass Spectrometry (Finnigan MAT261), Peter B. Mason, NBL-SA-U, Pu(I)-2, Revision 1, New Brunswick Laboratory, 12/14/99,
AE-I-105	Alpha Spectrometric Measurements for Alpha-emitting Nuclides, David T. Baran, NBL-SA-U, Pu(I)-3, Revision 1, New Brunswick Laboratory, 12/3/99,
AE-I-106	Preparation of Standard Potassium Dichromate Titrant, M. Irene Spaletto, NBL-CAL-U(E)-1, Revision 6, New Brunswick Laboratory, 12/03/99,
AE-I-107	Preparation of Uranium Standard Solutions, M. Irene Spaletto, NBL-CAL-U(E)-2, Revision 5, New Brunswick Laboratory, 12/3/99,
AE-I-109	Preparation and Standardization of Potassium Dichromate Titrant, Iris W. Frank, NBL-CAL-U(E)-3, Revision 3, New Brunswick Laboratory, 12/3/99,
AE-I-110	Preparation of Uranium Spike Solution for Isotope Dilution Mass Spectrometry Analysis, Anthony J. Traina, NBL-CAL-U(EI)-1, Revision 1, New Brunswick Laboratory, 12/3/99,
AE-I-111	Subsampling Liquid UF6 from Bulk Containers, Usha I. Narayanan, NBL-S-U-1.1, Revision 3, New Brunswick Laboratory, 12/2/99,
AE-I-112	The Removal and Cleaning of the UF6 Mass Spectrometer Inlet System Cold Traps, Paul V. Croatto, NBL-S-U-3, Revision 1, New Brunswick Laboratory, 12/2/99,
AE-I-114	Operation of the NBL-Modified Cozzoli Ampulator, Paul V. Croatto, NBL-SP-GEN-8, Revision 2, New Brunswick Laboratory, 12/2/99,
AE-I-115	Operation of the Buehler Abrasive Cutter for Cutting Uranium Metals of Less Than 3% U-235 Enrichment, Glennda J. Oriowicz, NBL-SP-U-9, Revision 2, New Brunswick Laboratory, 12/14/99,
AE-I-116	Purification of Uranium by Anion Exchange Separation (Mini Column), Usha I. Narayanan, NBL-SP-U-12, Revision 2, New Brunswick Laboratory, 12/14/99,
AE-I-117	Purification of Uranium for Mass Spectrometric Analysis, Alma V. Stiffin, NBL-SP-U-(I)-1, Revision 3, New Brunswick Laboratory, 12/14/99,
AE-I-118	Purification of Uranium for Mass Spectrometric Analysis Using U/TEVA-SPEC Columns, Iris W. Frank, NBL-SP-U(I)-4, Revision 2, New Brunswick Laboratory, 12/14/99,
AE-I-119	Filament Degassing Procedure (Finnigan MAT 261), Anthony J. Traina, NBL-SP-U, Pu(I)-2.1, Revision 1, New Brunswick Laboratory, 12/14/99,
AE-I-120	Determination of Density with the Mettler/Paar DMA 46 Density Meter, Khalida S. Scheidelman, NBL-SA-PP-2.1, Revision 1, New Brunswick Laboratory, 11/24/99,
AE-I-121	Determination of Uranium in Solids, Sediments, and Sludges, Alice M. Essling, Donald G. Graczyk, SOP: ACL-032, Revision 01, Analytical Chemistry Laboratory, 1/30/87,
AE-I-122	Determining Isotopic Composition of Uranium or Plutonium by Thermal Ionization Mass Spectrometry, Florence P. Smith, SOP: ACL-030, Revision 01, Analytical Chemistry Laboratory, 12/12/96,
AE-I-123	Determination of Uranium in Waters, Alice M. Essling, SOP: ACL-029, Revision 1, Analytical Chemistry Laboratory, 1/30/87,
AE-I-124	Sample Preparation and Separation of Pu, Th, and Am from Solid (Soils, Sediments, Sweepings) and Liquid (Waters, Milk) Environmental Samples for Analysis by Alpha-Spectrometry, L. B. Gillis, F. Markin, L. L. Wetter, SOP: ACL-031, Revision 6, Analytical Ch
AE-I-125	Cleaning of Laboratory Glassware for Use in Sample Preparation for Environmental Radionuclides, Lynn B. Gillis, SOP: ACL-090, Revision 2, Analytical Chemistry Laboratory, 1/30/87,

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AE-I-126	Standard Operating Procedure: Sample Preparation by Total Dissolution and Separation of Thorium, Plutonium, and Americium from Solid Environmental Samples for Analysis by Alpha-Spectrometry, Lesa L. Wetter, SOP: ACL-130, Revision 00, Analytical Chemistry
AE-I-127	Standard Operating Procedure: Sample Preparation of Solid Environmental Samples for Analysis of Radionuclides, Lesa L. Wetter, SOP: ACL-146, Revision 00, Analytical Chemistry Laboratory, 07/05/90,
AE-I-128	Standard Operating Procedure Gross Alpha and Beta Radioactivity, Richard B. Holtzman, W. Elane Streets, SOP: ACL-095, Revision 01, Analytical Chemistry Laboratory, 1/10/92,
AE-I-129	Contamination Control and Handling of Laboratory Waste, Stephen D. Kent, SOP: ACL-173, Revision 00, Analytical Chemistry Laboratory, 10/26/92,
AE-I-130	Standard Operating Procedure: Cleaning of Mixed Waste Glassware, Kathleen J. Parish, SOP: ACL-178, Revision 00, Analytical Chemistry Laboratory, 10/26/92,
AE-I-131	Standard Operating Procedure: Volatile Organic Analysis for Mixed Waste, Laura L. Lamoureux, SOP: ACL-176, Revision 00, Analytical Chemistry Laboratory, 10/26/92,
AE-I-132	Standard Operating Procedure: Gross Alpha/Beta Analysis of Soil and Sediment Samples by High-Pressure Microwave Digestion, Judith S. Yaeger, Lesa L. Smith, SOP: ACL-201, Revision 00, Analytical Chemistry Laboratory, 5/8/95,
AE-I-133	Standard Operating Procedure Operation of the Tennelec LB 5110 Series II Automatic Alpha-Beta Proportional Counter, Judith S. Yaeger, Lesa L. Smith, SOP: ACL-118, Revision 03, Analytical Chemistry Laboratory, 06/25/96,
AE-I-134	Standard Operating Procedure: Separation of Plutonium, Thorium, Americium, and Uranium from Environmental Samples Utilizing Extraction Chromatography and Anion Exchange Chromatography, Judith S. Yaeger, Lesa L. Smith, SOP: ACL-165, Revision 03, Analytical
AE-I-135	Standard Operating Procedure: Preconcentration and Determination of Actinides in Soil Samples Using Diphonix TM Resin and a NaOH Total Dissolution, Judith S. Yaeger and Lesa L. Smith, SOP: ACL-204, Revision 01, Analytical Chemistry Laboratory, 11/19/98,
AE-I-136	Standard Operating Procedure: Using Ion Chromatography for the Determination of Anions in Radioactive and/or Low Volume Samples, Delbert D. Bowers, SOP: ACL-217, Revision 02, Analytical Chemistry Laboratory, 4/2/99,
AE-I-137	Standard Operating Procedure: X-Ray Diffraction (XRD) of Plutonium Samples In Building 205, Rooms B-125 and B-130, Benjamin S. Tani, Paul L. Johnson, SOP: ACL-202, Revision 00, Analytical Chemistry Laboratory, 9/12/96,
AE-I-138	Operation of the United Technologies Packard 2550 TR/AB Tri-Carb Liquid Scintillation Analyzer and Interfaced Compaq 4/25S System, Delbert L. Bowers, SOP: ACL-247, Revision 00, Analytical Chemistry Laboratory, 3/28/00,
AE-I-140	Standard Operating Procedure Sample Preparation and Separation of Plutonium, Americium, Uranium, and Strontium from Air Filters, TonyTenKate, Lesa L. Wetter, SOP: ACL-132, Revision 00, Analytical Chemistry Laboratory, 04/05/88,
AE-I-142	Standard Operating Procedure: Determination of Uranium in Waters by Kinetic Phosphorimetry, Alice M. Essling, SOP: ACL-144, Revision 00, Analytical Chemistry Laboratory; Chemical Technology Division; Argonne National Laboratory, 05/24/90,
AE-I-143	Standard Operating Procedure: Determination of Uranium in Rocky Flats Soils, Sediments, and Sludges by Kinetic Phosphorimetry, Alice M. Essling, SOP: ACL-148, Revision 01, Analytical Chemistry Laboratory; Chemical Technology Division; Argonne National Lab
AE-I-144	Standard Operating Procedure: Separation of Uranium from Rocky Flats Soils, Sediments, and Sludges for Isotopic Abundance Determinations, Alice M. Essling, SOP: ACL-164, Revision 01, Analytical Chemistry Laboratory; Chemical Technology Division; Argonne N
AE-I-145	Standard Operating Procedure: Preparation of Environmental Samples for Gamma Spectroscopy Analysis, W. Elaine Streets, SOP: ACL-072, Revision 01, Analytical Chemistry Laboratory; Chemical Technology Division; Argonne National Laboratory, 1/30/87,
AE-I-146	Standard Operating Procedure: Radium-226 and Radium-228 Determination in Water and Soil Samples Using NaI Detector and Least Squares Processing of Data, Francis Markun, SOP: ACL-108, Revision 03, Analytical Chemistry Laboratory; Chemical Technology Divis
AE-I-147	Standard Operating Procedure: Determination of Strontium in Environmental Samples Utilizing Extraction Chromatography, Judith S. Yeager, Lesa L. Smith, SOP: ACL-167, Revision 05, Analytical Chemistry Laboratory; Chemical Technology Division; Argonne Natio
AE-I-149	Standard Operating Procedure: Determination of Strontium in Environmental Water Samples, Lesa L. Wetter, SOP: ACL-113, Revision 01, Analytical Chemistry Laboratory; Chemical Technology Division; Argonne National Laboratory, 07/31/87,
AE-I-150	Standard Operating Procedure: Determination of Strontium in Environmental Soils and Vegetations, Lesa L. Wetter, SOP: ACL-117, Revision 00, Analytical Chemistry Laboratory; Chemical Technology Division; Argonne National Laboratory, 07/31/87,
AE-I-151	Standard Operating Procedure: Determination of Technetium-99 in Environmental Samples, Francis Markun, Lesa L. Wetter, SOP: ACL-124, Revision 01, Analytical Chemistry Laboratory; Chemical Technology Division; Argonne National Laboratory, 10/23/87,
AE-I-152	Standard Operating Procedure: Preparation of WIPP Solidified Waste (Simulated Type I Sludge CC 111/211) Performance Demonstration Sludge Blank for Metal Analysis, K.J. Parish, SOP: ACL-226, Revision 00, Analytical Chemistry Laboratory; Chemical Technology

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AE-I-158	Bagout of Lead from Plutonium Gloveboxes; Building 212, L. Cheever, EWM/685, Argonne National Laboratory, 9/15/93,
AE-I-160	Waste Disposal Requisition Process, Lachman, M. M., NBL-SOP-ESH-4, Revision 1, New Brunswick Laboratory, 12/94,
AE-I-165	Transfer Request to Building 205 of Waste Pails..., D. B. Chamberlain, et al, 3/18/91,
AE-I-167	Work Plan for the Fabrication of Chemically Bonded Phosphate Samples Containing Plutonium, L.A. Neimark, IPS-237-00-00, 1/9/97,
AE-I-171	Work Plan for the Preparation of Specimens from the Characterization of Pins UW02010 (A/G 498A) and UW08036 (A/G 498B), L.A. Neimark, IPS-284-00-00, 6/17/98,
AE-I-172	SRTC Fission-Product Collection Test 96-1, A.B. Cohen, 12/4/96,
AE-I-173	Optical Metallography and SEM Analysis of RERTR Irradiated Specimens, A.B. Cohen, 3/26/97,
AE-I-174	Work Plan for the Preparation of Al-Clad Fuel Specimens for Pacific Northwest National Lab (PNNL), L.A. Neimark, IPS-247-00-01, 1, 4/2/97,
AE-I-176	Memo: Revision 2 to Work Plan for Conducting Melt Dilution Tests on Al-clad Fuels, A.B. Cohen, IPS-282-00-02, 9/12/98,
AE-I-181	Basic and Applied Studies in Liquid-Liquid Extraction, Ion Exchange, and Extraction Chromatography, Kenneth L. Nash, Seth Snyder, PRD Number: KLN-2, Revision 1, Chemistry Division; Coordination Chemistry and Separation Science; Argonne National Laboratory
AE-I-182	Novel Liquid-Liquid Extraction and Extraction Chromatographic Systems for the Separation and Preconcentration of Radionuclides, Dietz, Mark L. and Cafasso, Fred A., Chemistry Division; Chemical Separations; Argonne National Laboratory - East, 11/1/96,
AE-I-183	Basic and Applied Studies in Liquid-Liquid Extraction and Ion Exchange, Chemistry Division; Chemical Separations; Argonne National Laboratory, PRD Number: KLN-2, 11/5/96,
AE-I-184	Characterization of New Chelating Agents, Chemistry Division; Heavy Elements Coordination Chemistry; Argonne National Laboratory, PRD Number: KLN-3, 11/5/96,
AE-I-185	Phosphate Mineralization of Actinides by Measured Addition of Precipitating Anions, Chemistry Division; Heavy Elements Coordination Chemistry; Argonne National Laboratory, PRD Number: KLN-4, 11/5/96,
AE-I-186	Two-Stage Molecular Agents, Chemistry Division; Chemical Separations; Argonne National Laboratory, PRD Number: KLN-5, 11/21/96,
AE-I-187	Synthesis of Compounds for Chemical Separations, Chemistry Division; Chemical Separations Science; Argonne National Laboratory, PRD Number: MLD-1, 4/7/98,
AE-I-191	Evaluation of Chemicals Used by New Brunswick Laboratory, Krause, Tom, 9/15/00,
AE-I-192	Evaluation of Chemicals used by the Analytical Chemical Laboratory, Krause, Tom, 9/15/00,
AE-I-193	Evaluation of Chemicals used by the Chemistry Division, Krause, Tom, 9/15/00,
AE-I-194	Venting Sealed Pouches and Other Primary Packages that Contain TRU Waste from Gloveboxes (e.g. Opening Closed Containers and Venting Sealed Pouches), ANL-E WMO, JP9900 6, Revision 1, 1/2/01,
AE-P-018	Waste Management Handling Procedures Manual, Sections 4, 11-15, Appendices A, C-D, Plant Facilities and Services, Waste Management, Building 215, 0, Plant Facilities and Services, Waste Management, Building 215, 01/91,
AE-P-044	Safety Analysis Report - New Brunswick Laboratory, Mason, Robert A, None, New Brunswick Laboratory, 10/90,
AE-P-045	Draft Safety Analysis Report - New Brunswick Laboratory, Dallmann, D. Eric, None, Draft, New Brunswick Laboratory, 01/00,
AE-P-059	Chemical Technolgy Division Annual Technical Report 1984, Chemical Technology Division, ANL-85-9, 2/1/85,
AE-P-060	Chemical Technology Division Annual Technical Report 1987, Chemical Technology Division, ANL-88-19, ANL-E, 5/1/88,
AE-P-061	Chemical Technology Division Annual Technical Report 1989, Chemical Technology Division, ANL-90/11, ANL-E, 3/1/90,
AE-P-062	Chemical Technology Division Annual Technical Report 1986, Chemical Technology Division, ANL-87-19, ANL-E, 6/1/87,
AE-P-063	Chemical Technology Division Annual Technical Report 1990, Chemical Technology Division, ANL-91/18, ANL-E, 5/1/91,
AE-P-064	Chemical Technology Division Annual Technical Report 1991, Chemical Technology Division, ANL-92/15, ANL-E, 3/1/92,
AE-P-065	Chemical Technology Division Annual Technical Report 1992, Chemical Technology Division, ANL-93/17, 6/1/93,
AE-P-069	ANL-E Waste Management System Database, Waste Management Operations Department, ANL-E, WMO, ongoing,
AE-P-095	Waste Operations Operating Manual, ANL-E Waste Management Operations, 1, ANL-E Waste Management Operations, 08/02/99,
AE-P-097	Waste Management Operating Procedures Manual; Historic Chapter 4.5, Waste Management Operations Department, 0 to 5, ANL-E/WMO, 1/91 to 1/00,

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AE-P-099	Waste Management Operating Procedures Manuel : historic Addendum 4 B, ANL-E Environment Management Operations, ANL-E/WMO, 7/23/96,
AE-P-102	Waste Management Operating Procedures Manual; Historic Chapter 9.15, Waste Management Operations Department, 0 to 1, ANL-E/WMO, 5/99 to 8/99,
AE-P-105	New Brunswick Laboratory ESH Manual, Chapter V, Section I, "Waste Management", Mansfield, C. L., Revision 1, New Brunswick Laboratory, June 2000,
AE-P-106	Alpha-Gamma Hot Cell Facility (AGHCF) Safety Analysis Report, ANL-E/Energy Technology Division, IPS-221-00-0, 0, ANL-E, 1/30/98,
AE-P-107	Surveys of Research in the Chemistry Division - 1988, Leon M. Stock, Fred A. Cafasso, ANL-E/Chemistry Division, 1988,

CHARACTERIZATION INFORMATION SUMMARY

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Attachment 3 – Characterization Information Summary Cover Page

Waste Stream Lot Number: AECHDM Lot 1

AK Expert Review: David B Becker Date: 5/9/03

STR Review (if necessary): _____ Date: _____

SPQAO Review: A.J. Fisher C.J. Fisher Date: 5/9/03

SPM Review: _____ Date: 5-9-03

SPQAO signature indicates that the information presented in this package is consistent with analytical batch reports.

SPM signature certifies that through Acceptable Knowledge testing and/or analysis that the waste identified in this summary is not corrosive, ignitable, reactive, or incompatible with the TSDF.

A summary of the Acceptable Knowledge regarding this waste stream containing specific information about the corrosivity, reactivity and ignitability of the waste stream is included as an attachment to the Waste Stream Profile Form. By reference, that information is included in this lot.

List of procedures used:
Visual Examination:
CCP-TP-013, rev. 12, CCP Waste Visual Examination and Repackaging, January 26, 2003.
CCP-TP-013, rev. 11, CCP Waste Visual Examination and Repackaging, December 6, 2002.
CCP-TP-013, rev. 10, CCP Waste Visual Examination and Repackaging, November 26, 2002.
CCP-TP-013, rev. 9, CCP Waste Visual Examination and Repackaging, September 4, 2002.
CCP-TP-013, rev. 8, CCP Waste Visual Examination and Repackaging, August 26, 2002.
CCP-TP-013, rev. 7, CCP Waste Visual Examination and Repackaging, June 18, 2002.
CCP-TP-013, rev. 6, CCP Waste Visual Examination and Repackaging, June 14, 2002.
CCP-TP-013, rev. 5, CCP Waste Visual Examination and Repackaging, June 5, 2002.
CCP-TP-013, rev. 4, CCP Waste Visual Examination and Repackaging, April 17, 2002.
CCP-TP-013, rev. 3, CCP Waste Visual Examination and Repackaging, April 3, 2002.
CCP-TP-013, rev. 2, CCP Waste Visual Examination and Repackaging, March 5, 2002.
CCP-TP-013, rev. 1, CCP Waste Visual Examination and Repackaging, September 24, 2001.

Headspace Gas Analysis:
CCP-TP-031, rev. 12, CCP Headspace Gas Sampling Using Automated Manifold, February 4, 2003.
CCP-TP-031, rev. 11, CCP Headspace Gas Sampling Using Automated Manifold, October 16, 2002.
CCP-TP-031, rev. 10, CCP Headspace Gas Sampling Using Automated Manifold, September 3, 2002.
CCP-TP-031, rev. 9, CCP Headspace Gas Sampling Using Automated Manifold, July 18, 2002.
CCP-TP-031, rev. 8, CCP Headspace Gas Sampling Using Automated Manifold, April 30, 2002.
CCP-TP-031, rev. 7, CCP Headspace Gas Sampling Using Automated Manifold, March 28, 2002.
CCP-TP-031, rev. 6, CCP Headspace Gas Sampling Using Automated Manifold, March 25, 2002.
CCP-TP-031, rev. 5, CCP Headspace Gas Sampling Using Automated Manifold, March 8, 2002.
CCP-TP-031, rev. 4, CCP Headspace Gas Sampling Using Automated Manifold, January 24, 2002.
CCP-TP-031, rev. 3, CCP Headspace Gas Sampling Using Automated Manifold, November 13, 2001.
CCP-TP-031, rev. 2, CCP Headspace Gas Sampling Using Automated Manifold, September 27, 2001.
CCP-TP-031, rev. 1, CCP Headspace Gas Sampling Using Automated Manifold, August 28, 2001.
CCP-TP-034, rev. 9, CCP HSG Data Generation and Batch Data Reporting, February 4, 2003.

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CCP-TP-034, rev. 8, CCP HSG Data Generation and Batch Data Reporting, October 16, 2002,
CCP-TP-034, rev. 7, CCP HSG Data Generation and Batch Data Reporting, September 4, 2002.
CCP-TP-034, rev. 6, CCP HSG Data Generation and Batch Data Reporting, July 10, 2002,
CCP-TP-034, rev. 5, CCP HSG Data Generation and Batch Data Reporting, May 15, 2002,
CCP-TP-034, rev. 4, CCP HSG Data Generation and Batch Data Reporting, May 1, 2002,
CCP-TP-034, rev. 3, CCP HSG Data Generation and Batch Data Reporting, March 25, 2002,
CCP-TP-034, rev. 2, CCP HSG Data Generation and Batch Data Reporting, October 23, 2001,
CCP-TP-034, rev. 1, CCP HSG Data Generation and Batch Data Reporting, October 3, 2001,

Nondestructive Assay:
CCP-TP-017, rev. 14, CCP APNEA Data Analysis, January 23, 2003
CCP-TP-017, rev. 13,CCP APNEA Data Analysis, August 29, 2002
CCP-TP-017, rev. 12,CCP APNEA Data Analysis, August 6, 2002
CCP-TP-017, rev. 11,CCP APNEA Data Analysis, May 30, 2002
CCP-TP-017, rev. 10,CCP APNEA Data Analysis, May 23, 2002

CCP-TP-018, rev. 10,CCP APNEA Waste Drum Assay Operations, August 28, 2002
CCP-TP-018, rev. 9, CCP APNEA Waste Drum Assay Operations, August 6, 2002
CCP-TP-018, rev. 8, CCP APNEA Waste Drum Assay Operations, May 31, 2002
CCP-TP-018, rev. 7,CCP APNEA Waste Drum Assay Operations, May 21, 2002

CCP-TP-036, rev. 13, CCP WIT Nondestructive Assay, October 11, 2002
CCP-TP-036, rev. 12, CCP WIT Nondestructive Assay, August 30, 2002
CCP-TP-036, rev. 11, CCP WIT Nondestructive Assay, August 6, 2002
CCP-TP-036, rev. 10, CCP WIT Nondestructive Assay, May 29, 2002

CCP-TP-038, rev. 5, CCP WIT Nondestructive Assay Empirical Data Quality Measurements, September 5, 2002
CCP-TP-038, rev. 4, CCP WIT Nondestructive Assay Empirical Data Quality Measurements, August 26, 2002
CCP-TP-038, rev. 3, CCP WIT Nondestructive Assay Empirical Data Quality Measurements, June 6, 2002

Project Level Data Validation/DQO Reconciliation:
CCP-TP-001, rev. 8, CCP Project Level Data Validation and Verification, February 3, 2003
CCP-TP-001, rev. 7, CCP Project Level Data Validation and Verification, January 13, 2003
CCP-TP-001, rev. 6, CCP Project Level Data Validation and Verification, May 15, 2002
CCP-TP-001, rev. 5, CCP Project Level Data Validation and Verification, March 8, 2002

CCP-TP-002, rev. 12, CCP Reconciliation of DQOs and Reporting Characterization Data, April 30, 2003
CCP-TP-002, rev. 11, CCP Reconciliation of DQOs and Reporting Characterization Data, October 24, 2002
CCP-TP-002, rev. 10, CCP Reconciliation of DQOs and Reporting Characterization Data, June 19, 2002
CCP-TP-002, rev. 9, CCP Reconciliation of DQOs and Reporting Characterization Data, June 6, 2002
CCP-TP-002, rev. 8, CCP Reconciliation of DQOs and Reporting Characterization Data, March 7, 2002

CCP-TP-003, rev. 12, CCP Sampling Design and Data Analysis for RCRA Characterization, January 25, 2003
CCP-TP-003, rev. 11, CCP Sampling Design and Data Analysis for RCRA Characterization, January 20, 2003
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CCP-TP-003, rev. 9, CCP Sampling Design and Data Analysis for RCRA Characterization, October 10, 2002
CCP-TP-003, rev. 8, CCP Sampling Design and Data Analysis for RCRA Characterization, August 23, 2002
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CCP-TP-003, rev. 6, CCP Sampling Design and Data Analysis for RCRA Characterization, March 20, 2002

CCP-TP-005, rev. 12, CCP Acceptable Knowledge Documentation, March 26, 2003
CCP-TP-005, rev. 11, CCP Acceptable Knowledge Documentation, February 5, 2003
CCP-TP-005, rev. 10, CCP Acceptable Knowledge Documentation, October 24, 2002
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CCP-TP-005, rev. 7, CCP Acceptable Knowledge Documentation, September 6, 2002
CCP-TP-005, rev. 6, CCP Acceptable Knowledge Documentation, July 23, 2002
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CCP-TP-005, rev. 4, CCP Acceptable Knowledge Documentation, January 17, 2002

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CCP-TP-30, rev. 7, CCP WWIS Data Entry and TRU Waste Certification, January 8, 2003
CCP-TP-30, rev. 6, CCP WWIS Data Entry and TRU Waste Certification, September 19, 2002
CCP-TP-30, rev. 5, CCP WWIS Data Entry and TRU Waste Certification, June 27, 2002
CCP-TP-30, rev. 4, CCP WWIS Data Entry and TRU Waste Certification, May 21, 2002
CCP-TP-30, rev. 3, CCP WWIS Data Entry and TRU Waste Certification, October 24, 2001

WAP Certification:
CCP-PO-001, rev. 5, CCP Transuranic Waste Characterization Quality Assurance Project Plan, February 5, 2003
CCP-PO-001, rev. 4, CCP Transuranic Waste Characterization Quality Assurance Project Plan, May 31, 2002
CCP-PO-001, rev. 3, CCP Transuranic Waste Characterization Quality Assurance Project Plan, January 14, 2002

CCP-PO-002, rev. 5, CCP Transuranic Waste Certification Plan, February 12, 2003
CCP-PO-002, rev. 4, CCP Transuranic Waste Certification Plan, May 17, 2002
CCP-PO-002, rev. 3, CCP Transuranic Waste Certification Plan, January 21, 2002

CCP-PO-007, rev. 6, CCP/ANL-E Interface Document, January 26, 2003
CCP-PO-007, rev. 5, CCP/ANL-E Interface Document, September 12, 2002
CCP-PO-007, rev. 4, CCP/ANL-E Interface Document, June 5, 2002
CCP-PO-007, rev. 3, CCP/ANL-E Interface Document, April 10, 2002
CCP-PO-007, rev. 2, CCP/ANL-E Interface Document, March 7, 2002
CCP-PO-007, rev. 1, CCP/ANL-E Interface Document, November 19, 2001
CCP-PO-007, rev. 0, CCP/ANL-E Interface Document, August 22, 2001

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Attachment 3 Table 1 - Correlation of Container Identification Numbers to Batch Data Report Numbers

Container ID Number	On-Line Headspace Gas BDR	NDA BDR	RTR BDR	VE BDR	Solids Sampling BDR	Solids Analytical BDR
AE22281	AEHSG01110502a	AEAPNEA081302a	NA	AEMOVER120502a	NA	NA
AE25498	AEHSG01011303a	AEAPNEA022403a	NA	AEMOVER050702a	NA	NA
AE25500	AEHSG01110802a	AEWIT001092402a	NA	AEMOVER042502a	NA	NA
AE25506	AEHSG01120202a	AEAPNEA082802a	NA	AEMOVER050202a	NA	NA
AE25510	AEHSG01112702a	AEAPNEA082802a	NA	AEMOVER051702a	NA	NA
AE25513	AEHSG01120302a	AEAPNEA082802a	NA	AEMOVER042202a	NA	NA
AE25514	AEHSG01011403a	AEAPNEA022003a	NA	AEMOVER060702a	NA	NA
AE25515	AEHSG01011303a	AEAPNEA022403a	NA	AEMOVER061202a	NA	NA
AE25517	AEHSG01110802a	AEAPNEA111502a	NA	AEMOVER041802a	NA	NA
AE25523	AEHSG01111102a	AEAPNEA102302a	NA	AEMOVER121902a	NA	NA
AE25524	AEHSG01011303a	AEAPNEA022403a	NA	AEMOVER051502a	NA	NA
AE25534	AEHSG01011303a	AEAPNEA022403a	NA	AEMOVER062502a	NA	NA
AE25535	AEHSG01111302a	AEAPNEA102302a	NA	AEMOVER120602a	NA	NA
AE25543	AEHSG01011403a	AEAPNEA022003a	NA	AEMOVER052402a	NA	NA
AE25563	AEHSG01011403a	AEAPNEA022003a	NA	AEMOVER061902a	NA	NA
AE25569	AEHSG01011303a	AEAPNEA022403a	NA	AEMOVER060302a	NA	NA
AE25577	AEHSG01120202a	AEAPNEA082802a	NA	AEMOVER052902a	NA	NA
AE25729	AEHSG01110802a	AEAPNEA081302a	NA	AEMOVER112702a	NA	NA
AE25775	AEHSG01112202a	AEAPNEA110502a	NA	AEMOVER120902a	NA	NA
AE25969	AEHSG01112702a	AEAPNEA090602a	NA	AEMOVER051402a	NA	NA
AE25972	AEHSG01011303a	AEAPNEA022003a	NA	AEMOVER071602a	NA	NA
AE25977	AEHSG01120302a	AEAPNEA110702a	NA	AEMOVER010803a	NA	NA
AE25984	AEHSG01011303a	AEAPNEA022003a	NA	AEMOVER053102a	NA	NA
AE25986	AEHSG01112202a	AEAPNEA102302a	NA	AEMOVER120302a	NA	NA
AE25992	AEHSG01011403a	AEAPNEA022003a	NA	AEMOVER052202a	NA	NA
AE25997	AEHSG01120302a	AEAPNEA082802a	NA	AEMOVER042602a	NA	NA
AE27219	AEHSG01120302a	AEAPNEA102302a	NA	AEMOVER010703a	NA	NA
AE27554	AEHSG01120302a	AEAPNEA110702a	NA	AEMOVER010403a	NA	NA

Signature of Site Project Manager

Steven Rose

5-2-03
Date

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Attachment 2 - UCL_{90} Evaluation Form

WSPF #: AECHDM **Waste Stream Lot Number:** 1

ANALYTE	Transform Data Used (No, Data-Log, SQTI, other)	# Samples	# Samples above MDL	Maximum (ppmv)	Mean (ppmv)	SD (ppmv)	UCL_{90} (ppmv)	PRQL (ppmv)	Transformed PRQL (N/A or Value)	UCL_{90} > PRQL Yes	EPA Code
Benzene	NO	28	0	0.90	0.90	0.00	—	10	N/A		
Bromoform	NO	28	0	0.95	0.95	0.00	—	10	N/A		
Carbon tetrachloride	NO	28	0	1.00	1.00	0.00	—	10	N/A		
Chlorobenzene	NO	28	0	1.00	1.00	0.00	—	10	N/A		
Chloroform	NO	28	0	1.20	1.20	0.00	—	10	N/A		
Cyclohexane[a]	N/A	0	—	—	—	—	—	—	N/A		
1,1-Dichloroethane	NO	28	0	1.10	1.10	0.00	—	10	N/A		
1,2-Dichloroethane	NO	28	0	1.00	1.00	0.00	—	10	N/A		
1,1-Dichloroethylene	NO	28	0	1.30	1.30	0.00	—	10	N/A		
cis-1,2-Dichloroethylene	NO	28	0	0.80	0.80	0.00	—	10	N/A		
trans-1,2-Dichloroethylene	NO	28	0	0.75	0.75	0.00	—	10	N/A		
Ethyl benzene	NO	28	0	1.05	1.05	0.00	—	10	N/A		
Ethyl ether	NO	28	0	1.15	1.15	0.00	—	10	N/A		
Formaldehyde[c]	N/A	0	—	—	—	—	—	10	N/A		
Hydrazine[d]	N/A	0	—	—	—	—	—	10	N/A		
Methylene chloride	NO	28	0	1.10	1.10	0.00	—	10	N/A		
1,1,2,2-Tetrachloroethane	NO	28	0	1.25	1.25	0.00	—	10	N/A		
Tetrachloroethylene	NO	28	0	1.00	1.00	0.00	—	10	N/A		
Toluene	NO	28	0	1.00	1.00	0.00	—	10	N/A		
1,1,1-Trichloroethane	NO	28	0	0.90	0.90	0.00	—	10	N/A		
Trichloroethylene	NO	28	0	0.95	0.95	0.00	—	10	N/A		
1,1,2-Trichloro-1,2,2-trifluoroethane	NO	28	0	1.00	1.00	0.00	—	10	N/A		
1,2,4-Trimethylbenzene[a]	N/A	0	—	—	—	—	—	—	N/A		
1,3,5-Trimethylbenzene[a]	N/A	0	—	—	—	—	—	—	N/A		

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ANALYTE	Transform Data Used (No, Data-Log, SQRI, other)	# Samples	# Samples above MDL	Maximum (ppmv)	Mean (ppmv)	SD (ppmv)	UCL_{90} (ppmv)	PRQL (ppmv)	Transformed PRQL (N/A or Value)	UCL_{90} > PRQL Yes	EPA Code
m-Xylene[b]	NO	28	0	2.00	2.00	0.00	----	10	N/A		
p-Xylene[b]	NO	28	0	2.00	2.00	0.00	----	10	N/A		
o-Xylene	NO	28	0	0.85	0.85	0.00	----	10	N/A		
Acetone	LOG	28	2	4.47	2.46	0.43	2.57	100	4.61		
							----	100	N/A		
							2.56	100	4.61		
							----	100	N/A		
Methyl isobutyl ketone	NO	28	0	10.0	10.0	0.00	----	100	N/A		

[a]These compounds are from the TRAMPAC and are flammable VOCs that do not appear in the QAPjP or the WIPP WAP. These are not part of the target analysis list, but samples may be analyzed for these compounds.
[b]These xylene isomers cannot be resolved by the analytical methods employed in the program. M-xylene and p-xylene will be reported as "Total m-p-Xylene."
[c]Required only for homogenous solids and soil/gravel waste from Los Alamos National Laboratory and Savannah River Site.
[d]Required only for homogenous solids and soil/gravel waste from Oak Ridge National Laboratory and Savannah River Site.

Comments:
When the "LOG" transformed data is provided, it is represented in LOG LN.

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Attachment 3 Table 2 - Headspace Gas Summary Data

Tentatively Identified Compound	Maximum Observed Estimated Concentrations (ppmv)	# Samples Containing TIC	% Detected
None identified			

Data confirms Acceptable Knowledge?	Yes	☒	No	☐

If no, describe the basis for assigning the EPA Hazardous Waste Codes:

WSPF# AECHDM Lot 1

SPM Signature _____ Date: 5/2/03

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Attachment 3 Table 6 – RTR/VE Summary of Prohibited Items and AK Confirmation

Container Number	RTR Prohibited Items[a]	Visual Examination Prohibited Items[a]	AK Confirmation[bc]
AE22281	N/A	None	Yes
AE25498	N/A	None	Yes
AE25500	N/A	None	Yes
AE25506	N/A	None	Yes
AE25510	N/A	None	Yes
AE25514	N/A	One >4 liter container found in drum. Prohibited item was segregated and returned to generator.	Yes, the possibility of prohibited items in the AECHDM waste stream is indicated. As a result of finding prohibited items in this waste stream, a drum remediation program has been implemented to eliminate prohibited items.
AE25515	N/A	None	Yes
AE25517	N/A	None	Yes
AE25523	N/A	None	Yes
AE25524	N/A	None	Yes
AE25534	N/A	None	Yes
AE25535	N/A	None	Yes
AE25543	N/A	None	Yes
AE25563	N/A	None	Yes
AE25569	N/A	None	Yes
AE25577	N/A	None	Yes

a. See Batch Data Reports
b. Attachment 10 of CCP-TP-005, *CCP Acceptable Knowledge Documentation*
c. If AK has assigned U134 to this waste stream, then any liquids in these containers are prohibited items (not acceptable by the TSDF).

SPM Signature:  Printed Name Steven Rose Date: 5/2/03

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Attachment 3 Table 6 – RTR/VE Summary of Prohibited Items and AK Confirmation

Container Number	RTR Prohibited Items[a]	Visual Examination Prohibited Items[a]	AK Confirmation[bc]
AE25729	N/A	One >4 liter sealed container found in drum. Prohibited item was segregated and returned to generator.	Yes, the possibility of prohibited items in the AECHDM waste stream is indicated. As a result of finding prohibited items in this waste stream, a drum remediation program has been implemented to eliminate prohibited items.
AE25775	N/A	None	Yes
AE25969	N/A	None	Yes
AE25972	N/A	None	Yes
AE25977	N/A	None	Yes
AE25984	N/A	None	Yes
AE25986	N/A	None	Yes
AE25992	N/A	None	Yes
AE25997	N/A	None	Yes
AE27219	N/A	None	Yes
AE27554	N/A	One >4 liter heat sealed container found in drum. Prohibited item was segregated and returned to generator.	Yes, the possibility of prohibited items in the AECHDM waste stream is indicated. As a result of finding prohibited items in this waste stream, a drum remediation program has been implemented to eliminate prohibited items.
AE25513	N/A	One >4 liter sealed container found in drum. Prohibited item was segregated and returned to generator.	Yes, the possibility of prohibited items in the AECHDM waste stream is indicated. As a result of finding prohibited items in this waste stream, a drum remediation program has been implemented to eliminate prohibited items.

a. See Batch Data Reports
b. Attachment 10 of CCP-TP-005, *CCP Acceptable Knowledge Documentation*
c. If AK has assigned U134 to this waste stream, then any liquids in these containers are prohibited items (not acceptable by the TSDF).

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SPM Signature: Printed Name Steven Rosa Date: 5/2/03

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Attachment 1B - Reconciliation with Data Quality Objectives

SPQAO Sampling Completeness
RTR:
Number of valid samples: NA** Number of total samples analyzed: NA**
Percent Complete: NA** (QAO is ≥100%)
NDA:
Number of valid samples: 28 Number of total samples analyzed: 28
Percent Complete: 100% (QAO is ≥100%)
HSG:
Number of valid samples: 28 Number of total samples collected: 28
Percent Complete: 100% (QAO is ≥90%)
Number of valid samples: 28 Number of total samples analyzed: 28
Percent Complete: 100% (QAO is ≥90%)
~~SPAO~~ SPQAO Signature and Date: A.J. FISHER A.J. Fisher 5/9/03
I certify that sufficient data have been collected to determine the following Program-required waste parameters:
G.J.F. 5/9/03

WSPF# AECHDM Lot# 1

	YN/NA	Reconciliation Parameter
1.	Y	Waste Matrix Code.
2.	Y1	Waste Material Parameter Weights.
3.	Y	The waste matrix code identified is consistent with the type of sampling and analysis used to characterized the waste.
4.	Y	The TRU activity reported in the BDR's for each container demonstrates with a 95% probability that the container of waste contains TRU radioactive waste.
5.	Y	Potential Flammability. Is there sufficient AK or analytical data to demonstrate that the waste meets that potential flammability limits (Headspace Gas, BDR and Summary Sheet)?
6.	Y	Mean concentrations, upper 90% confidence limit (UCL_{90}) values for the mean concentration, standard deviation, and the number of samples collected for each VOC in the headspace gas of each container were calculated and compared with the program required quantitation limits, as reported in Attachment 2 to CCP-TP-003, and additional EPA Hazardous Waste codes were assigned as required. Samples were randomly collected (when appropriate).
7a.	NA*	Mean concentrations, UCL_{90} values for the mean concentration, standard deviation, and the number of samples collected for total **VOCs** were calculated and compared with the program required quantitation limits and regulatory thresholds, as reported in the Characterization Information Summary Table 3, and additional EPA Hazardous Waste codes were assigned as required. Samples were randomly collected.

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Attachment 1B - Reconciliation with Data Quality Objectives (continued)

7b.	NA*	Mean concentrations, upper 90% confidence limit (UCL_{90}) values for the mean concentration, standard deviations, and the number of samples collected for **total SVOCs** were calculated and compared with the program required quantitation limits and regulatory thresholds, as reported in the Characterization Information Summary Table 4, and additional EPA Hazardous Waste codes were assigned as required. Samples were randomly collected.
7c.	NA*	Mean concentrations, upper 90% confidence limit (UCL_{90}) values for the mean concentration, standard deviations, and the number of samples collected for **total metals** were calculated and compared with the program required quantitation limits and regulatory thresholds, as reported in the Characterization Information Summary Table 5, and additional EPA Hazardous Waste codes were assigned as required. Samples were randomly collected.
8.	Y	The data demonstrates whether the waste stream exhibits are toxicity characteristic under 40 CFR 261, Subpart C.
9	Y	Waste stream can be classified as hazardous or nonhazardous at the 90-percent confidence level.
10.	NA**	Sufficient number of waste containers have been visually examined to determine the UCL_{90} for the miscertification rate is less than 14%.
11.	Y	Appropriate packaging configuration and Drum Age Criteria (DAC) is applied and documented in the headspace gas sampling documentation, and the drum age met prior to sampling.
12.	Y2	TICs were appropriately identified and reported in accordance with the requirements of Section B3-1 of the QAPjP.
13.	Y	The PRQLs for headspace gas VOCs were met for all analyses as evidenced by the analytical batch data report.
		The overall completeness, comparability, and representativeness QAOs were met for each of the analytical and testing procedures as specified in the WAP Sections B3-2 through B3-9 prior to submittal of a waste stream profile form for a waste steam of waste stream lot.

		Completeness	Comparability	Representativeness
NA**	Radiography	NA**	NA**	NA**
NA***	Headspace Gas Sampling And Analysis	NA***	NA***	NA***

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Attachment 1B - Reconciliation with Data Quality Objectives (continued)

	Y	Headspace Gas Analysis	Y	Y	Y
14.	NA*	Solids Sampling	NA*	NA*	NA*
	NA*	Total VOCs	NA*	NA*	NA*
	NA*	Total SVOCs	NA*	NA*	NA*
	NA*	Total Metals	NA*	NA*	NA*

Signature of Site Project Manager | Steven Rosa (Printed Name) | 5/9/03 (Date)

Y1 Waste Material Parameter Weights were determined during VE (in lieu of RTR).
Y2 No TICs
NA* Not analyzing homogenous solids.
NA** VE was perfomed in lieu of Radiography for all 28 drums in this first lot.
NA*** On-line-sampling system

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